

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-021007

(43)Date of publication of application : 24.01.1995

(51)Int.Cl.

G06F 3/14

(21)Application number : 05-165343

(71)Applicant : HITACHI LTD

(22)Date of filing : 05.07.1993

(72)Inventor : HASEGAWA TSUKASA

NAITO AKIRA

KASAI YASUHIKO

YOSHIDA SHINICHI

TSUCHIYA TOMOKO

ASUMA HAJIME

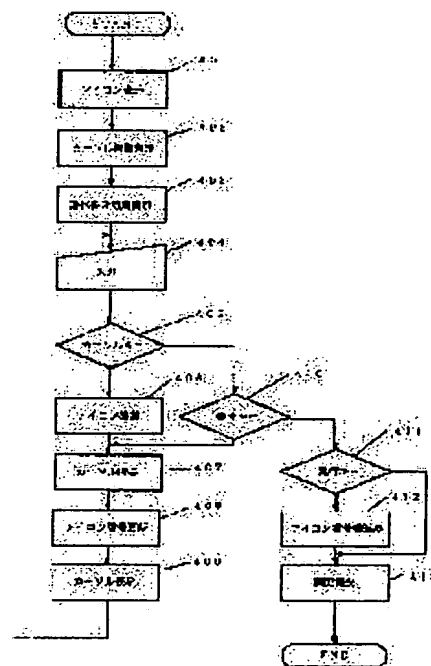
MATSUDA YASUMASA

## (54) INFORMATION PROCESSOR AND MENU SELECTING SYSTEM

### (57)Abstract:

**PURPOSE:** To prevent the display position of an icon from being changed, to unnecessitate a cursor moving operation and to improve convenience when selecting an icon menu.

**CONSTITUTION:** The information processor is provided with a first display means for displaying the icon, second display means for displaying a cursor, cursor moving means for moving the cursor to the displayed icon, execution instructing means for instructing the execution of a function corresponding to the icon instructed by the cursor, and function executing means for executing a function corresponding to the icon. When the execution of the function is instructed by the execution instructing means, the information of the icon instructed by the cursor is stored in an icon information storage means (step 412) and the initial display position of the cursor in the case of displaying the icon again (step 401) is defined as an icon display position corresponding to the icon information stored in the icon information storage means (step 402).



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

CLAIMS

---

[Claim(s)]

[Claim 1] The 1st display means which displays an icon, and the 2nd display means which displays cursor, A cursor advance means to move cursor to the icon currently displayed, An activation directions means to direct to perform the function corresponding to the icon which cursor directs, The information processor characterized by having an icon information storage means to memorize the icon information which is the information processor which has a functional activation means to perform the function corresponding to an icon, and cursor directs.

[Claim 2] The above-mentioned icon information storage means is an information processor according to claim 1 characterized by consisting of memory to which electric power is supplied by the cell.

[Claim 3] It is the information processor according to claim 1 which is equipped with external storage and characterized by having the above-mentioned icon information storage means in external storage and the body of an information processor.

[Claim 4] The 1st display means which displays an icon, and the 2nd display means which displays cursor, A cursor advance means to move cursor to the icon currently displayed, An activation directions means to direct to perform the function corresponding to the icon which cursor directs, It is the menu selection method of the information processor which has a functional activation means to perform the function corresponding to an icon. The information on the icon which cursor directs when performing a function with the above-mentioned activation directions means is directed is memorized for the above-mentioned icon information storage means. The menu selection method characterized by considering as the icon display position corresponding to the icon information which memorized the initial display position of the cursor at the time of displaying an icon again for the above-mentioned icon information storage means.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

## DETAILED DESCRIPTION

---

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention displays an icon and relates to the information processor which performs the function corresponding to the icon, and its menu selection method by choosing the icon.

[0002]

[Description of the Prior Art] In a personal computer, a workstation, a word processor, etc., the information processor which took in the icon menu selection approach of performing the function to correspond is spreading by displaying two or more icons on a screen as a menu item, moving cursor to an icon, and choosing the icon. For example, by touching the keys of the four-directions cursor key of a keyboard, or inputting the number 102 currently assigned to the icon 101 by the numerical keypad like drawing 1 R> 1, cursor 103 is moved to a desired icon and actuation of performing the function corresponding to the icon by the stroke of an Enter key is carried out.

[0003] In the above menu selection approaches, there are some which were indicated by JP,4-256117,A as an information processor which is made to change a display position and sequence and raises the user-friendliness of menu selection actuation. This information processor establishes a means to memorize menu selection frequency, and changes and displays the display position and display order of a menu item based on this selection frequency.

[0004]

[Problem(s) to be Solved by the Invention] Although it is said that the actuation load which the above-mentioned conventional technique displays a menu item with high selection frequency on the location near the initial display position or initial display position of cursor, and selection actuation of a menu item with high selection frequency takes will be mitigated Check whether whenever it does not know when the display position of a menu item changes but menu selection actuation generates a user, the display position of a menu has changed, or It must stop having to check where the desired menu item is displayed, and there is a trouble of not being user-friendly.

[0005] About such a conventional trouble, paid one's attention to this invention, it was made, and does not make the display position of an icon change, but sets it as the 1st purpose to offer the information processor which raises the user-friendliness at the time of choosing again the icon chosen last time.

[0006] Furthermore, this invention sets it as the 2nd purpose to offer the information processor which raises the user-friendliness at the time of choosing again the icon chosen last time, also after electric supply of a power source is intercepted and electric supply is again resumed from a power source.

[0007]

[Means for Solving the Problem] The 1st display means which displays an icon as the 1st configuration of an information processor in order to attain the above-mentioned purpose, The 2nd display means which displays cursor, and a cursor advance means to move cursor to the icon currently displayed, He is trying to have an activation directions means to direct to perform the function corresponding to the icon which cursor directs, a functional activation means to perform the function corresponding to an icon, and an icon information storage means to memorize the icon information which cursor directs.

[0008] Moreover, he is trying to constitute the above-mentioned icon information storage means from memory to which electric power is supplied by the cell as the 2nd configuration of the information processor for attaining the above-mentioned purpose.

[0009] Moreover, the 3rd configuration of the information processor for attaining the above-mentioned purpose is equipped with external storage, and he is trying to have the above-mentioned icon information storage means in external storage and the body of an information processor.

[0010]

[Function] In the 1st configuration of the above, when performing a function with the above-mentioned activation directions means is directed, it can consider as the icon display position corresponding to the icon information which memorized the initial display position of the cursor at the time of displaying an icon again for the above-mentioned icon information storage means by memorizing the information on the icon which cursor directs for the above-mentioned icon information storage means.

[0011] Furthermore, it can consider as the icon display position chosen last time in the initial display position of the cursor at the time of displaying an icon also after electric supply was again resumed from the power source since the information memorized by the above-mentioned icon information storage means even if electric supply of a power source was intercepted according to the 2nd configuration of the above was held.

[0012] Moreover, external storage and the icon information storage means which it has in the body of an information processor are made to memorize the information on the icon which cursor directs when performing a function with the above-mentioned activation directions means is directed in the 3rd configuration of the above. Electric supply of a power source is intercepted and the icon information memorized for the icon information storage means of external storage immediately after resuming electric supply from a power source is again memorized for the icon information storage means within an information processing body. Therefore, it can consider as the icon display position chosen last time in the first stage display position of the cursor at the time of displaying an icon also after a power source to electric supply was resumed again, since it was recoverable after electric supply of a power source was intercepted in the icon information memorized for the icon information storage means within an information processing body before electric supply of a power source was intercepted and a power source to electric supply was resumed again or.

[0013]

[Example] Hereafter, the example of this invention is explained using drawing. Drawing 2 shows the example of a configuration of the element which is needed at least, when the information processor used by this example is constituted. As shown in drawing 2, the information processor of this example consists of the arithmetic and program control (hereafter referred to as CPU) 201 which controls the whole system, an input unit 202 like the keyboard which inputs alphabetic characters and a control code, an indicating equipment 203 for displaying an icon and an information processing result, main storage 204 for an information processor to memorize a program and data working, and external storage 205 that memorizes the program stored in this main storage 204, and data.

[0014] You may make it use together with a pointing device like a mouse or a pen as an input

device 202 here. Moreover, although external storage 205 is a storage like a floppy disk drive unit or a hard disk drive unit, it may be made a configuration which is used together with the memory only for readouts (hereafter referred to as ROM).

[0015] In addition, in this example, a cursor advance means and an activation directions means are constituted by the cursor key of an input unit 202, and the Enter key, and the icon information storage means is constituted by main storage 204.

[0016] In the primary storage 204, as shown in drawing 3, the data about an icon or cursor are memorized. In the icon management data 302, the icon management information for several icon minutes of 301 is memorized by making the data from 321 to 327 into one unit. An icon number 321 is a number assigned to each icon in order to move cursor to the icon which is in agreement with the figure inputted by the input of a numerical keypad. The functional number 322 for activation is a number which shows the function assigned to the icon, and the information processor of this example performs the function based on this number in which cursor is located with the directions from activation directions means, such as an Enter key of a keyboard. As data about an icon display, there are the display left end coordinate 323, the display upper limit coordinate 324, 325 longitudinal direction display dots, and 326 lengthwise direction display dots. Moreover, 305 is icon pattern data and the address to the icon pattern data to each icon is 327.

[0017] Moreover, in the information processor of this invention, the rectangle field which reversed a part of icon currently displayed like 103 of drawing 1 is made into cursor, and the cursor management data about this cursor display is memorized to 304. 341 and 342 are the relative-coordinate values from the display upper left edge coordinates 323 and 324 of an icon, and, as for 341, 342 is a reversal upper limit coordinate about a reversal left end coordinate. Furthermore, as range of reversal, 343 is the number of longitudinal direction reversal dots, and 344 is the number of lengthwise direction reversal dots.

[0018] When the icon number of the icon in which cursor is located when 303 shows the icon, and 306 are directed from an activation directions means, they are the icon number of the icon in which cursor is located.

[0019] Next, according to the flow chart shown in drawing 4, cursor is moved from an icon menu and the display of cursor, and actuation until it directs activation of a function is explained.

[0020] When an icon menu display is directed, CPU201 displays an icon first for the number 301 minutes of icons shown in drawing 3 (step 401). About the display of each icon, the icon pattern data 305 which the icon pattern address 327 wets are read, and a display left end coordinate is displayed on a display 203, using [ 323 and a display upper limit coordinate ] 325 and the number of lengthwise direction display dots as 326 for 324 and the number of longitudinal direction display dots.

[0021] Next, CPU201 performs the initial display of cursor as follows (step 402). First, 303 is made to memorize the icon number of 306. And the range with 343 longitudinal direction reversal dots and 344 lengthwise direction reversal dots is reversed by making the relative-coordinate locations 341 and 342 on the basis of the display left end coordinate 323 of the icon corresponding to this icon number 303, and the display upper limit coordinate 324 into an upper left edge reversal coordinate.

[0022] As above-mentioned, an icon, the message from which CPU201 constitutes the icon number and menu screen of 303 for cursor after an initial display are displayed (step 403), and the display screen becomes like drawing 1.

[0023] After an icon menu display receives a key input from the input unit 202 shown in drawing 2 (step 404), judges the key inputted at steps 405, 410, and 411, and performs processing according to the inputted key.

[0024] At step 405, it judges whether the inputted key is a cursor key, and if it is a cursor key,

\*\*\*\* will be most searched with step 406 among the icons which a cursor key tends to mean from the icon in which cursor is located. Retrieval is performed by comparing the distance between coordinates based on the display upper left edge coordinates 323 and 324 of each icon shown in drawing 3 . And the cursor currently displayed on the display 203 is eliminated (step 407), and 303 is made to memorize the icon number 321 of the icon searched with step 406 (step 408), and regeneration of the icon number and cursor which are displayed is carried out (step 409), and it shifts to reception processing of the key of step 404.

[0025] At step 410, it judges whether the inputted key is a numerical keypad, and if it is a numerical keypad, the cursor currently displayed on the display 203 is eliminated (step 407), by making into an icon number the figure which a numerical keypad means, 303 will be made to memorize (step 408) and regeneration of the icon number and cursor which are displayed will be carried out (step 409).

[0026] At step 411, it judges whether the inputted key is an Enter key, and if it is an Enter key, 306 will be made to memorize the icon number of 303 (step 412), and it will eliminate [ cursor / which are displayed on the display 203 / an icon, cursor etc. ] (step 413).

[0027] Moreover, after processing termination of step 413 performs the function based on the functional number 322 for activation corresponding to the icon number memorized to 316.

[0028] Since according to the above-mentioned example the icon number in which cursor is located is memorized when the Enter key which the initial display position of cursor is an icon display position applicable to the icon number of 306, and directs activation of a function is inputted (step 412), the initial display position of cursor can be displayed on the icon display position which the cursor at the time of an Enter key being inputted last time directs.

[0029] In the above-mentioned example, since the data of 306 will be held even if the electric supply from a power source is intercepted if the storage means of 306 is used as the memory to which electric power is supplied by the cell, also after electric supply is again started from a power source, the initial display of cursor based on the data of 306 can be performed.

Moreover, in step 412, even if it makes it make 306 memorize the icon number memorized to the above-mentioned external storage 205 immediately after making it make the external storage 205 shown in drawing 2 memorize, having intercepted the electric supply from a power source, and starting electric supply from a power source again while making 306 memorize an icon number, it is the same.

[0030] Although step 412 is processed in this example whenever an Enter key is inputted, you may make it make step 412 process by preparing a means to make it direct by the user whether step 412 is made to process, holding these contents of directions as information, and judging this information just before step 412.

[0031]

[Effect of the Invention] In case the icon chosen last time is chosen again according to this invention, cursor advance actuation is unnecessary and the user-friendliness at the time of icon menu selection can be raised.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

TECHNICAL FIELD

---

[Industrial Application] This invention displays an icon and relates to the information processor which performs the function corresponding to the icon, and its menu selection method by choosing the icon.

---

[Translation done.]



\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

PRIOR ART

---

[Description of the Prior Art] In a personal computer, a workstation, a word processor, etc., the information processor which took in the icon menu selection approach of performing the function to correspond is spreading by displaying two or more icons on a screen as a menu item, moving cursor to an icon, and choosing the icon. For example, by touching the keys of the four-directions cursor key of a keyboard, or inputting the number 102 currently assigned to the icon 101 by the numerical keypad like drawing 1 R> 1, cursor 103 is moved to a desired icon and actuation of performing the function corresponding to the icon by the stroke of an Enter key is carried out.

[0003] In the above menu selection approaches, there are some which were indicated by JP,4-256117,A as an information processor which is made to change a display position and sequence and raises the user-friendliness of menu selection actuation. This information processor establishes a means to memorize menu selection frequency, and changes and displays the display position and display order of a menu item based on this selection frequency.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

EFFECT OF THE INVENTION

---

[Effect of the Invention] In case the icon chosen last time is chosen again according to this invention, cursor advance actuation is unnecessary and the user-friendliness at the time of icon menu selection can be raised.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPPI are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

TECHNICAL PROBLEM

---

[Problem(s) to be Solved by the Invention] Although it is said that the actuation load which the above-mentioned conventional technique displays a menu item with high selection frequency on the location near the initial display position or initial display position of cursor, and selection actuation of a menu item with high selection frequency takes will be mitigated Check whether whenever it does not know when the display position of a menu item changes but menu selection actuation generates a user, the display position of a menu has changed, or It must stop having to check where the desired menu item is displayed, and there is a trouble of not being user-friendly.

[0005] About such a conventional trouble, paid one's attention to this invention, it was made, and does not make the display position of an icon change, but sets it as the 1st purpose to offer the information processor which raises the user-friendliness at the time of choosing again the icon chosen last time.

[0006] Furthermore, this invention sets it as the 2nd purpose to offer the information processor which raises the user-friendliness at the time of choosing again the icon chosen last time, also after electric supply of a power source is intercepted and electric supply is again resumed from a power source.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

MEANS

---

[Means for Solving the Problem] The 1st display means which displays an icon as the 1st configuration of an information processor in order to attain the above-mentioned purpose, The 2nd display means which displays cursor, and a cursor advance means to move cursor to the icon currently displayed, He is trying to have an activation directions means to direct to perform the function corresponding to the icon which cursor directs, a functional activation means to perform the function corresponding to an icon, and an icon information storage means to memorize the icon information which cursor directs.

[0008] Moreover, he is trying to constitute the above-mentioned icon information storage means from memory to which electric power is supplied by the cell as the 2nd configuration of the information processor for attaining the above-mentioned purpose.

[0009] Moreover, the 3rd configuration of the information processor for attaining the above-mentioned purpose is equipped with external storage, and he is trying to have the above-mentioned icon information storage means in external storage and the body of an information processor.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

OPERATION

---

[Function] In the 1st configuration of the above, when performing a function with the above-mentioned activation directions means is directed, it can consider as the icon display position corresponding to the icon information which memorized the initial display position of the cursor at the time of displaying an icon again for the above-mentioned icon information storage means by memorizing the information on the icon which cursor directs for the above-mentioned icon information storage means.

[0011] Furthermore, it can consider as the icon display position chosen last time in the initial display position of the cursor at the time of displaying an icon also after electric supply was again resumed from the power source since the information memorized by the above-mentioned icon information storage means even if electric supply of a power source was intercepted according to the 2nd configuration of the above was held.

[0012] Moreover, external storage and the icon information storage means which it has in the body of an information processor are made to memorize the information on the icon which cursor directs when performing a function with the above-mentioned activation directions means is directed in the 3rd configuration of the above. Electric supply of a power source is intercepted and the icon information memorized for the icon information storage means of external storage immediately after resuming electric supply from a power source is again memorized for the icon information storage means within an information processing body. Therefore, it can consider as the icon display position chosen last time in the first stage display position of the cursor at the time of displaying an icon also after a power source to electric supply was resumed again, since it was recoverable after electric supply of a power source was intercepted in the icon information memorized for the icon information storage means within an information processing body before electric supply of a power source was intercepted and a power source to electric supply was resumed again or.

---

[Translation done.]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

EXAMPLE

---

[Example] Hereafter, the example of this invention is explained using drawing. Drawing 2 shows the example of a configuration of the element which is needed at least, when the information processor used by this example is constituted. As shown in drawing 2, the information processor of this example consists of the arithmetic and program control (hereafter referred to as CPU) 201 which controls the whole system, an input unit 202 like the keyboard which inputs alphabetic characters and a control code, an indicating equipment 203 for displaying an icon and an information processing result, main storage 204 for an information processor to memorize a program and data working, and external storage 205 that memorizes the program stored in this main storage 204, and data.

[0014] You may make it use together with a pointing device like a mouse or a pen as an input device 202 here. Moreover, although external storage 205 is a storage like a floppy disk drive unit or a hard disk drive unit, it may be made a configuration which is used together with the memory only for readouts (hereafter referred to as ROM).

[0015] In addition, in this example, a cursor advance means and an activation directions means are constituted by the cursor key of an input unit 202, and the Enter key, and the icon information storage means is constituted by main storage 204.

[0016] In the primary storage 204, as shown in drawing 3, the data about an icon or cursor are memorized. In the icon management data 302, the icon management information for several icon minutes of 301 is memorized by making the data from 321 to 327 into one unit. An icon number 321 is a number assigned to each icon in order to move cursor to the icon which is in agreement with the figure inputted by the input of a numerical keypad. The functional number 322 for activation is a number which shows the function assigned to the icon, and the information processor of this example performs the function based on this number in which cursor is located with the directions from activation directions means, such as an Enter key of a keyboard. As data about an icon display, there are the display left end coordinate 323, the display upper limit coordinate 324, 325 longitudinal direction display dots, and 326 lengthwise direction display dots. Moreover, 305 is icon pattern data and the address to the icon pattern data to each icon is 327.

[0017] Moreover, in the information processor of this invention, the rectangle field which reversed a part of icon currently displayed like 103 of drawing 1 is made into cursor, and the cursor management data about this cursor display is memorized to 304. 341 and 342 are the relative-coordinate values from the display upper left edge coordinates 323 and 324 of an icon, and, as for 341, 342 is a reversal upper limit coordinate about a reversal left end coordinate. Furthermore, as range of reversal, 343 is the number of longitudinal direction reversal dots, and 344 is the number of lengthwise direction reversal dots.

[0018] When the icon number of the icon in which cursor is located when 303 shows the icon, and 306 are directed from an activation directions means, they are the icon number of the icon in which cursor is located.

[0019] Next, according to the flow chart shown in drawing 4 , cursor is moved from an icon menu and the display of cursor, and actuation until it directs activation of a function is explained.

[0020] When an icon menu display is directed, CPU201 displays an icon first for the number 301 minutes of icons shown in drawing 3 (step 401). About the display of each icon, the icon pattern data 305 which the icon pattern address 327 wets are read, and a display left end coordinate is displayed on a display 203, using [ 323 and a display upper limit coordinate ] 325 and the number of lengthwise direction display dots as 326 for 324 and the number of longitudinal direction display dots.

[0021] Next, CPU201 performs the initial display of cursor as follows (step 402). First, 303 is made to memorize the icon number of 306. And the range with 343 longitudinal direction reversal dots and 344 lengthwise direction reversal dots is reversed by making the relative-coordinate locations 341 and 342 on the basis of the display left end coordinate 323 of the icon corresponding to this icon number 303, and the display upper limit coordinate 324 into an upper left edge reversal coordinate.

[0022] As above-mentioned, an icon, the message from which CPU201 constitutes the icon number and menu screen of 303 for cursor after an initial display are displayed (step 403), and the display screen becomes like drawing 1 .

[0023] After an icon menu display receives a key input from the input unit 202 shown in drawing 2 (step 404), judges the key inputted at steps 405, 410, and 411, and performs processing according to the inputted key.

[0024] At step 405, it judges whether the inputted key is a cursor key, and if it is a cursor key, \*\*\*\* will be most searched with step 406 among the icons which a cursor key tends to mean from the icon in which cursor is located. Retrieval is performed by comparing the distance between coordinates based on the display upper left edge coordinates 323 and 324 of each icon shown in drawing 3 . And the cursor currently displayed on the display 203 is eliminated (step 407), and 303 is made to memorize the icon number 321 of the icon searched with step 406 (step 408), and regeneration of the icon number and cursor which are displayed is carried out (step 409), and it shifts to reception processing of the key of step 404.

[0025] At step 410, it judges whether the inputted key is a numerical keypad, and if it is a numerical keypad, the cursor currently displayed on the display 203 is eliminated (step 407), by making into an icon number the figure which a numerical keypad means, 303 will be made to memorize (step 408) and regeneration of the icon number and cursor which are displayed will be carried out (step 409).

[0026] At step 411, it judges whether the inputted key is an Enter key, and if it is an Enter key, 306 will be made to memorize the icon number of 303 (step 412), and it will eliminate [ cursor / which are displayed on the display 203 / an icon, cursor etc. ] (step 413).

[0027] Moreover, after processing termination of step 413 performs the function based on the functional number 322 for activation corresponding to the icon number memorized to 316.

[0028] Since according to the above-mentioned example the icon number in which cursor is located is memorized when the Enter key which the initial display position of cursor is an icon display position applicable to the icon number of 306, and directs activation of a function is inputted (step 412), the initial display position of cursor can be displayed on the icon display position which the cursor at the time of an Enter key being inputted last time directs.

[0029] In the above-mentioned example, since the data of 306 will be held even if the electric supply from a power source is intercepted if the storage means of 306 is used as the memory to which electric power is supplied by the cell, also after electric supply is again started from a power source, the initial display of cursor based on the data of 306 can be performed.

Moreover, in step 412, even if it makes it make 306 memorize the icon number memorized to the above-mentioned external storage 205 immediately after making it make the external

storage 205 shown in drawing 2 memorize, having intercepted the electric supply from a power source, and starting electric supply from a power source again while making 306 memorize an icon number, it is the same.

[0030] Although step 412 is processed in this example whenever an Enter key is inputted, you may make it make step 412 process by preparing a means to make it direct by the user whether step 412 is made to process, holding these contents of directions as information, and judging this information just before step 412.

---

[Translation done.]



\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

DESCRIPTION OF DRAWINGS

---

[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the example of a display of an icon menu screen.

[Drawing 2] It is the configuration block Fig. of the information processor of the example concerning this invention.

[Drawing 3] It is an explanatory view to show the maintenance format of the data about an icon or cursor.

[Drawing 4] It is the flow chart which shows the procedure which displays an icon and cursor.

[Description of Notations]

- 201 -- CPU,
- 202 -- Input unit,
- 203 -- Display,
- 204 -- Main storage,
- 205 -- External storage.

---

[Translation done.]

## \* NOTICES \*

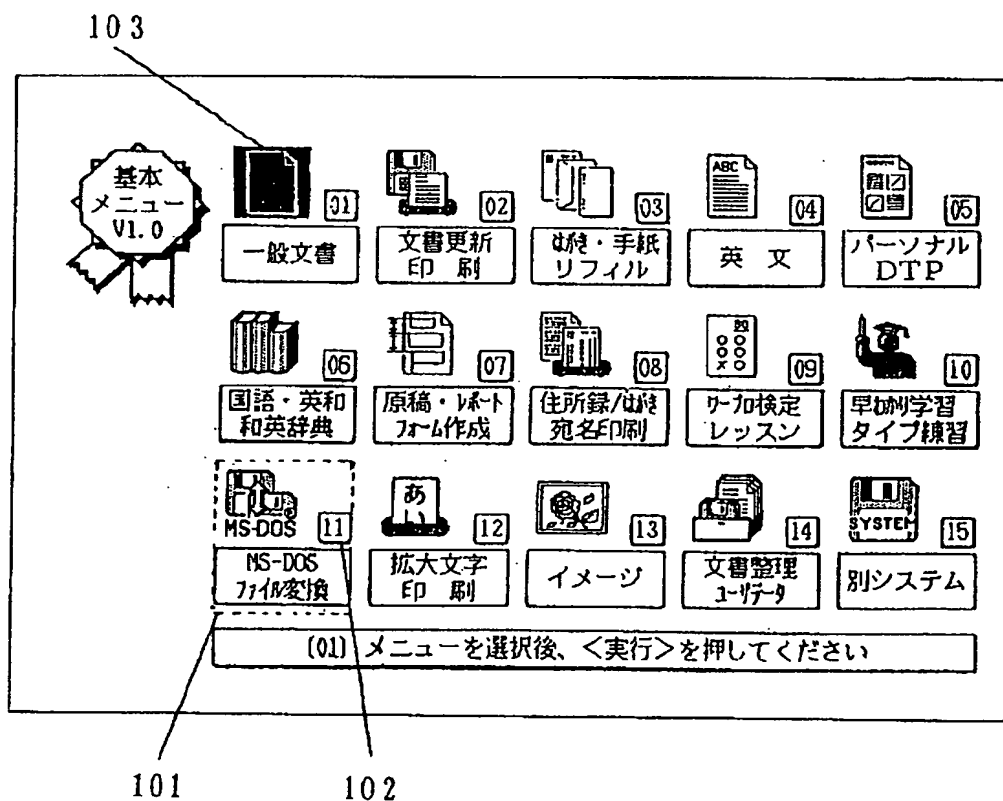
JPO and NCIPi are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

## DRAWINGS

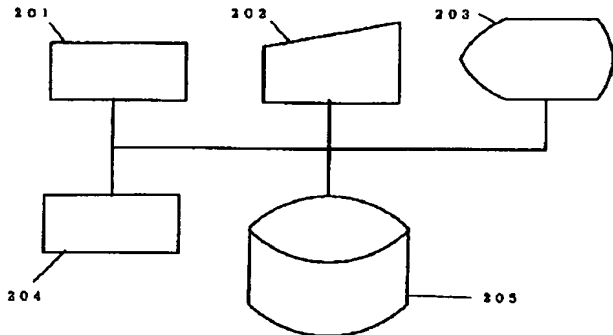
[Drawing 1]

図 1



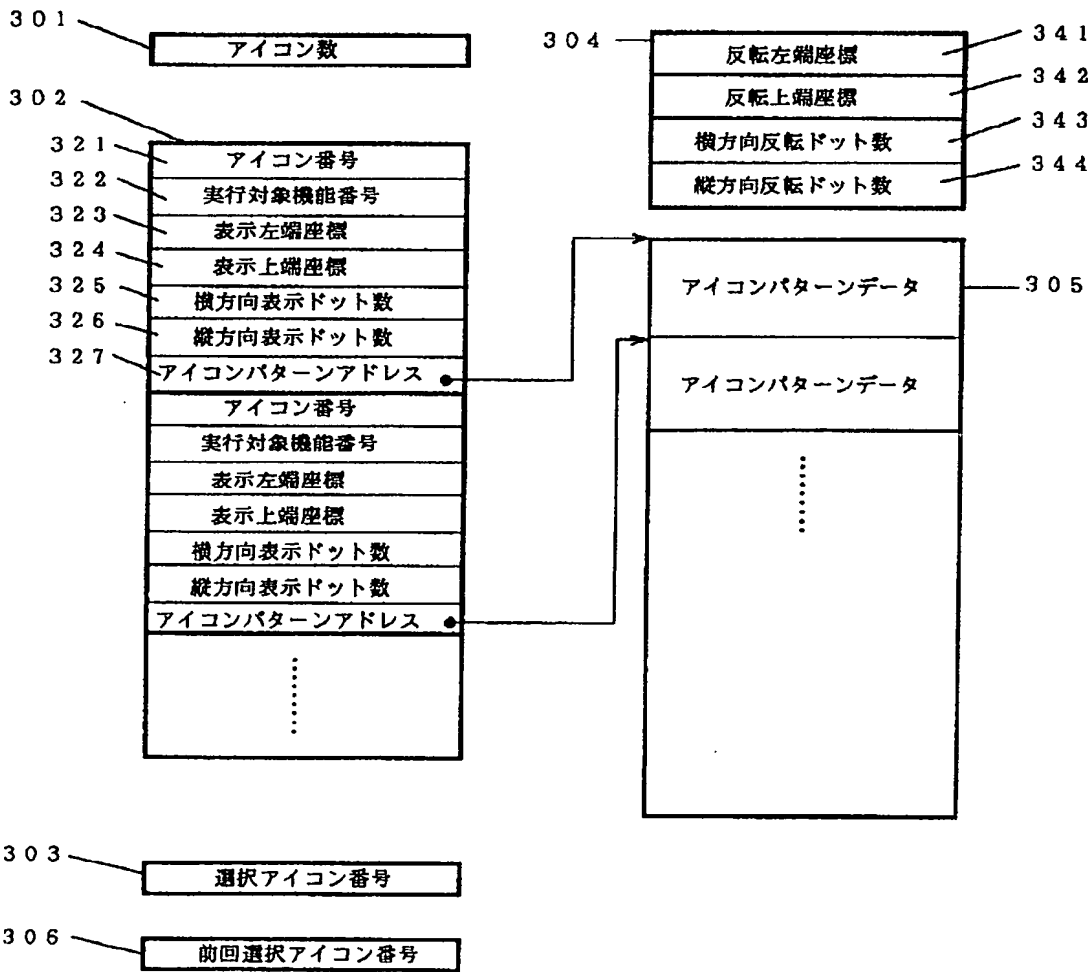
[Drawing 2]

図 2



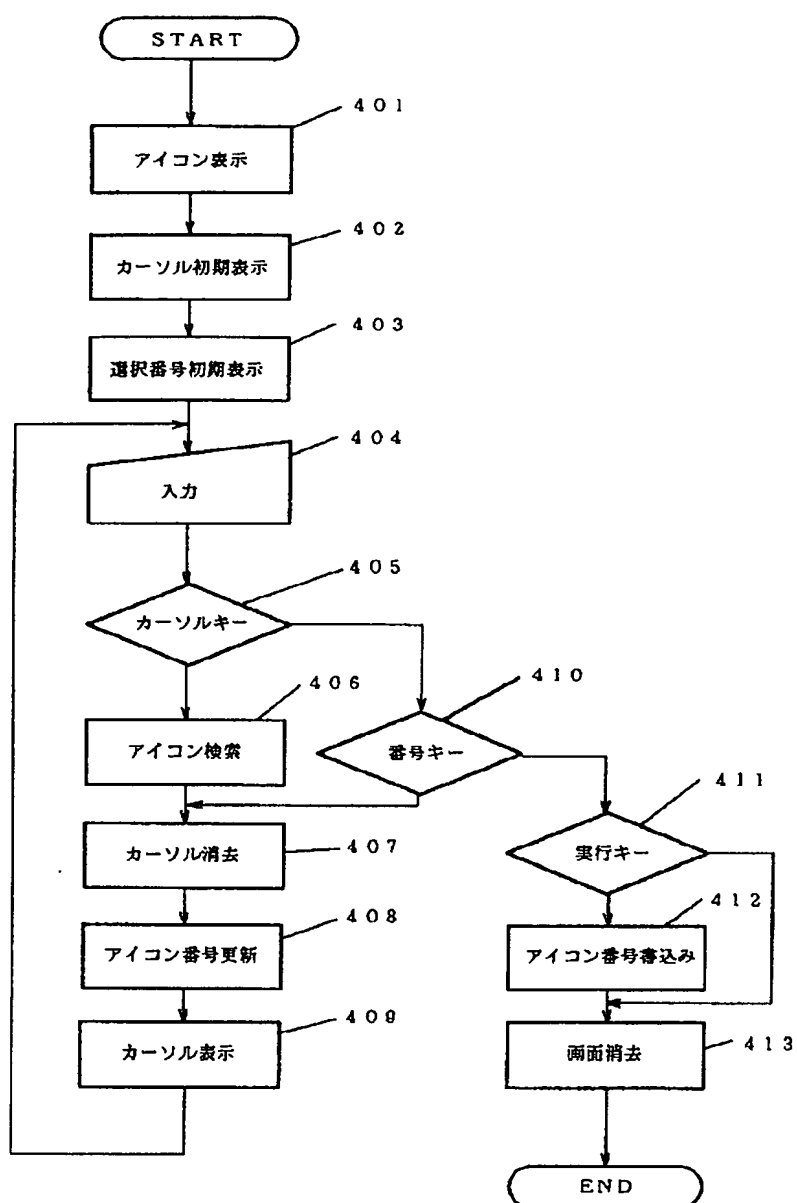
[Drawing 3]

図 3



[Drawing 4]

図 4



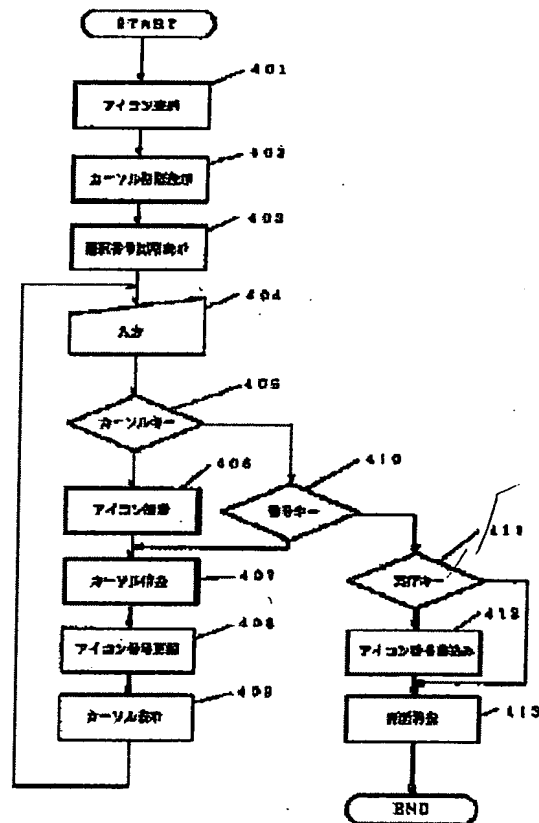
[Translation done.]

# INFORMATION PROCESSOR AND MENU SELECTING SYSTEM

**Patent number:** JP7021007  
**Publication date:** 1995-01-24  
**Inventor:** HASEGAWA TSUKASA; others: 06  
**Applicant:** HITACHI LTD  
**Classification:**  
**- International:** G06F3/14  
**- european:**  
**Application number:** JP19930165343 19930705  
**Priority number(s):**

## Abstract of JP7021007

**PURPOSE:** To prevent the display position of an icon from being changed, to unnecessary a cursor moving operation and to improve convenience when selecting an icon menu.  
**CONSTITUTION:** The information processor is provided with a first display means for displaying the icon, second display means for displaying a cursor, cursor moving means for moving the cursor to the displayed icon, execution instructing means for instructing the execution of a function corresponding to the icon instructed by the cursor, and function executing means for executing a function corresponding to the icon. When the execution of the function is instructed by the execution instructing means, the information of the icon instructed by the cursor is stored in an icon information storage means (step 412) and the initial display position of the cursor in the case of displaying the icon again (step 401) is defined as an icon display position corresponding to the icon information stored in the icon information storage means (step 402).



Data supplied from the esp@cenet database - Worldwide

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平7-21007

(43) 公開日 平成7年(1995)1月24日

(51) Int. Cl.<sup>5</sup>

G 0 6 F 3/14

識別記号

3 7 0 A

庁内整理番号

F I

技術表示箇所

審査請求 未請求 請求項の数4 O L (全 8 頁)

(21) 出願番号 特願平5-165343  
(22) 出願日 平成5年(1993)7月5日

(71) 出願人 000005108  
株式会社日立製作所  
東京都千代田区神田駿河台四丁目6番地  
(72) 発明者 長谷川 司  
神奈川県横浜市戸塚区吉田町292番地株式  
会社日立製作所マイクロエレクトロニクス  
機器開発研究所内  
(72) 発明者 内藤 彰  
神奈川県横浜市戸塚区吉田町292番地株式  
会社日立製作所マイクロエレクトロニクス  
機器開発研究所内  
(74) 代理人 弁理士 小川 勝男

最終頁に続く

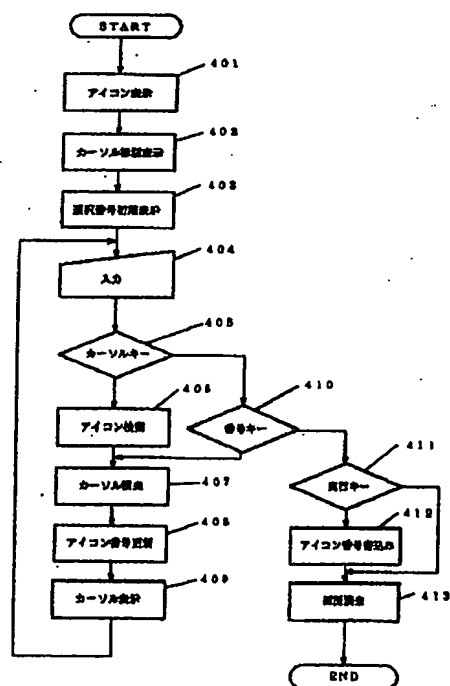
(54) 【発明の名称】 情報処理装置及びメニュー選択方式

(57) 【要約】

【目的】 アイコンの表示位置を変更せず、カーソル移動操作が不要であり、アイコンメニュー選択時の使い勝手を向上させること。

【構成】 アイコンを表示する第1の表示手段と、カーソルを表示する第2の表示手段と、表示しているアイコンにカーソルを移動させるカーソル移動手段と、カーソルが指示するアイコンに対応する機能を実行することを指示する実行指示手段と、アイコンに対応する機能を実行する機能実行手段とを有する情報処理装置であって、上記実行指示手段により機能を実行することを指示された際にカーソルが指示するアイコンの情報を上記アイコン情報記憶手段に記憶し (ステップ412)、再びアイコンを表示する (ステップ401) 際のカーソルの初期表示位置を上記アイコン情報記憶手段に記憶したアイコン情報に対応するアイコン表示位置とする (ステップ402)。

図 4



**【特許請求の範囲】**

【請求項1】アイコンを表示する第1の表示手段と、カーソルを表示する第2の表示手段と、表示しているアイコンにカーソルを移動させるカーソル移動手段と、カーソルが指示するアイコンに対応する機能を実行することを指示する実行指示手段と、アイコンに対応する機能を実行する機能実行手段とを有する情報処理装置であって、カーソルが指示するアイコン情報を記憶するアイコン情報記憶手段を有することを特徴とする情報処理装置。

【請求項2】上記アイコン情報記憶手段は電池により給電されるメモリで構成されることを特徴とする請求項1記載の情報処理装置。

【請求項3】外部記憶装置を備え、上記アイコン情報記憶手段は、外部記憶装置と情報処理装置本体内に有することを特徴とする請求項1記載の情報処理装置。

【請求項4】アイコンを表示する第1の表示手段と、カーソルを表示する第2の表示手段と、表示しているアイコンにカーソルを移動させるカーソル移動手段と、カーソルが指示するアイコンに対応する機能を実行することを指示する実行指示手段と、アイコンに対応する機能を実行する機能実行手段とを有する情報処理装置のメニュー選択方式であって、上記実行指示手段により機能を実行することを指示された際にカーソルが指示するアイコンの情報を上記アイコン情報記憶手段に記憶し、再びアイコンを表示する際のカーソルの初期表示位置を上記アイコン情報記憶手段に記憶したアイコン情報に対応するアイコン表示位置とすることを特徴とするメニュー選択方式。

**【発明の詳細な説明】****【0001】**

【産業上の利用分野】本発明は、アイコンを表示し、そのアイコンを選択することによりそのアイコンに対応する機能を実行する情報処理装置およびそのメニュー選択方式に関する。

**【0002】**

【従来の技術】パーソナルコンピュータ、ワークステーション、ワードプロセッサ等において、画面に複数のアイコンをメニュー項目として表示し、カーソルをアイコンに移動させ、そのアイコンを選択することにより、対応する機能を実行させるアイコンメニュー選択方法を取り入れた情報処理装置が普及してきている。例えば、図1のように、キーボードの上下左右カーソルキーを打鍵したり、アイコン101に割り当てている番号102を数字キーで入力したりすることにより、所望のアイコンにカーソル103を移動させ、実行キーの打鍵によりそのアイコンに対応した機能を実行するといった動作をする。

【0003】上記のようなメニュー選択方法において、表示位置や順序を変更させメニュー選択操作の使い勝手

を向上させる情報処理装置として特開平4-256117号公報に記載されたものがある。この情報処理装置は、メニュー選択頻度を記憶する手段を設け、該選択頻度に基づいて、メニュー項目の表示位置や表示順序を変えて表示するというものである。

**【0004】**

【発明が解決しようとする課題】上記従来技術は、カーソルの初期表示位置、あるいは、初期表示位置に近い位置に選択頻度の高いメニュー項目を表示し、選択頻度の高いメニュー項目の選択操作に要する操作負荷を軽減しようというものであるが、メニュー項目の表示位置がいつ変化するのかがわからず、ユーザはメニュー選択操作が発生する毎にメニューの表示位置が変わっているかを確認したり、所望のメニュー項目がどこに表示されているかを確認しなければならなくなり、使い勝手がよくないという問題点がある。

【0005】本発明は、このような従来の問題点について着目してなされたもので、アイコンの表示位置を変更させず、前回選択されたアイコンを再び選択する際の使い勝手を向上させる情報処理装置を提供することを第1の目的とする。

【0006】さらに本発明は、電源の給電が遮断され、再び、電源から給電が再開された後でも、前回選択されたアイコンを再び選択する際の使い勝手を向上させる情報処理装置を提供することを第2の目的とする。

**【0007】**

【課題を解決するための手段】上記目的を達成するために、情報処理装置の第1の構成として、アイコンを表示する第1の表示手段と、カーソルを表示する第2の表示手段と、表示しているアイコンにカーソルを移動させるカーソル移動手段と、カーソルが指示するアイコンに対応する機能を実行することを指示する実行指示手段と、アイコンに対応する機能を実行する機能実行手段と、カーソルが指示するアイコン情報を記憶するアイコン情報記憶手段を有するようにしている。

【0008】また、上記目的を達成するための情報処理装置の第2の構成として、上記アイコン情報記憶手段は電池により給電されるメモリで構成するようにしている。

【0009】また、上記目的を達成するための情報処理装置の第3の構成は、外部記憶装置を備え、上記アイコン情報記憶手段を外部記憶装置と情報処理装置本体内に有するようにしている。

**【0010】**

【作用】上記第1の構成において、上記実行指示手段により機能を実行することを指示された際にカーソルが指示するアイコンの情報を上記アイコン情報記憶手段に記憶することにより、再びアイコンを表示する際のカーソルの初期表示位置を上記アイコン情報記憶手段に記憶したアイコン情報に対応するアイコン表示位置とすること

ができる。

【0011】さらに上記第2の構成によれば、電源の給電が遮断されても、上記アイコン情報記憶手段に記憶された情報は保持されるので、再び、電源から給電が再開された後でも、アイコンを表示する際のカーソルの初期表示位置を前回選択されたアイコン表示位置とすることができる。

【0012】また、上記第3の構成において、上記実行指示手段により機能を実行することを指示された際にカーソルが指示するアイコンの情報を外部記憶装置と情報処理装置本体内に有するアイコン情報記憶手段とに記憶させ、電源の給電が遮断され、再び、電源から給電が再開された直後に、外部記憶装置のアイコン情報記憶手段に記憶しているアイコン情報を情報処理本体内のアイコン情報記憶手段に記憶するようにする。したがって、電源の給電が遮断される前に情報処理本体内のアイコン情報記憶手段に記憶していたアイコン情報を、電源の給電が遮断され、再び、電源から給電が再開された後でも回復することができるので、再び、電源から給電が再開された後でも、アイコンを表示する際のカーソルの初期表示位置を前回選択されたアイコン表示位置とすることができる。

【0013】

【実施例】以下、本発明の実施例を図を用いて説明する。図2は、本実施例で用いる情報処理装置を構成する上で、少なくとも必要になる要素の構成例を示したものである。図2に示すように、本実施例の情報処理装置は、システム全体を制御する中央演算処理装置（以下、CPUとする）201と、文字類、制御コードを入力するキーボードのような入力装置202と、アイコンや情報処理結果を表示するための表示装置203と、情報処理装置が動作中にプログラムやデータを記憶するための主記憶装置204と、該主記憶装置204に記憶させるプログラムやデータを記憶する外部記憶装置205から構成される。

【0014】ここで、入力装置202としては、マウスやペンのようなポインティングデバイスと併用するようにしてもよい。また、外部記憶装置205は、例えば、フロッピー・ディスク装置やハードディスク装置のような記憶媒体であるが、読みだし専用メモリ（以下、ROMとする）と併用するような構成にしてもよい。

【0015】なお、本実施例において、カーソル移動手段、実行指示手段は、入力装置202のカーソルキー、実行キーにより、アイコン情報記憶手段は主記憶装置204により、構成されている。

【0016】主記憶204内には、図3に示すように、アイコンやカーソルに関するデータが記憶されている。アイコン管理データ302には、321から327までのデータを1単位として、301のアイコン数分のアイコン管理情報を記憶している。アイコン番号321は、

数字キーの入力により入力された数字と一致するアイコンにカーソルを移動させるために各アイコンに割り当てた番号である。実行対象機能番号322は、アイコンに割り当てた機能を示す番号であり、本実施例の情報処理装置は、キーボードの実行キー等の実行指示手段からの指示により、カーソルが位置する該番号に基づいた機能を実行する。アイコン表示に関するデータとしては、表示左端座標323、表示上端座標324、横方向表示ドット数325、縦方向表示ドット数326がある。また、305はアイコンパターンデータであり、各アイコンに対するアイコンパターンデータへのアドレスが327である。

【0017】また、本発明の情報処理装置では、図1の103のように表示しているアイコンの一部を反転させた矩形領域をカーソルとしており、304に、該カーソル表示に関するカーソル管理データを記憶している。341と342は、アイコンの表示左上端座標323、324からの相対座標値であり、341は反転左端座標を、342は、反転上端座標である。さらに、反転の範囲として、343が横方向反転ドット数、344が縦方向反転ドット数である。

【0018】303はアイコンを表示している際にカーソルが位置しているアイコンのアイコン番号、306は実行指示手段から指示された際にカーソルが位置しているアイコンのアイコン番号である。

【0019】次に、図4に示すフローチャートに従って、アイコンメニュー、及び、カーソルの表示からカーソルを移動させ、機能の実行を指示するまでの動作について説明する。

【0020】アイコンメニュー表示が指示された場合、まず、CPU201は、図3に示すアイコン数301分、アイコンを表示する（ステップ401）。各アイコンの表示については、アイコンパターンアドレス327がしめすアイコンパターンデータ305を読みだし、表示左端座標を323、表示上端座標を324、横方向表示ドット数を325、縦方向表示ドット数を326として、表示装置203に表示する。

【0021】次に、CPU201はカーソルの初期表示を次のように行う（ステップ402）。まず、306のアイコン番号を303に記憶させる。そして、該アイコン番号303に対応するアイコンの表示左端座標323、表示上端座標324を基点とした相対座標位置341、342を左上端反転座標として、横方向反転ドット数343、縦方向反転ドット数344の範囲を反転する。

【0022】上記の通り、アイコン、及び、カーソルを初期表示後、CPU201は、303のアイコン番号やメニュー画面を構成するメッセージなどの表示（ステップ403）を行い、その表示画面は図1のようになる。

【0023】アイコンメニュー表示後は、図2に示す入



力装置202からキー入力を受け付け（ステップ404）、ステップ405、410、411で入力されたキーを判定し、入力されたキーに応じた処理を行う。

【0024】ステップ405では、入力されたキーがカーソルキーであるかを判定し、カーソルキーならば、ステップ406でカーソルが位置するアイコンからカーソルキーが意味する方向にあるアイコンのうち最も近いを検索する。検索は、図3に示す各アイコンの表示左上端座標323、324をもとに座標間の距離を比較することにより行う。そして、表示装置203に表示しているカーソルを消去し（ステップ407）、ステップ406で検索したアイコンのアイコン番号321を303に記憶させ（ステップ408）、表示しているアイコン番号やカーソルを再表示し（ステップ409）、ステップ404のキーの受付処理へ移行する。

【0025】ステップ410では、入力されたキーが数字キーであるかを判定し、数字キーならば、表示装置203に表示しているカーソルを消去し（ステップ407）、数字キーの意味する数字をアイコン番号として303に記憶させ（ステップ408）、表示しているアイコン番号やカーソルを再表示する（ステップ409）。

【0026】ステップ411では、入力されたキーが実行キーであるかを判定し、実行キーならば、303のアイコン番号を306に記憶させ（ステップ412）、表示装置203に表示しているアイコン、カーソルなど消去する（ステップ413）。

【0027】また、ステップ413の処理終了後は、316に記憶しているアイコン番号に対応する実行対象機能番号322に基づいた機能を実行する。

【0028】上記実施例によれば、カーソルの初期表示位置は、306のアイコン番号に該当するアイコン表示位置であり、機能の実行を指示する実行キーが入力された際にカーソルが位置しているアイコン番号を記憶するので（ステップ412）、カーソル初期表示位置は、前回実行キーが入力された際のカーソルが指示するアイコン表示位置に表示することができる。

【0029】上記実施例において、306の記憶手段を

電池により給電されるメモリにすれば、電源からの給電が遮断されても306のデータは保持されるので、再び電源から給電が開始されたあとでも、306のデータに基づいたカーソルの初期表示を行えることができる。また、ステップ412において、アイコン番号を306に記憶させると同時に、図2に示す外部記憶装置205に記憶させるようにし、電源からの給電が遮断され、再び電源から給電が開始された直後に、上記外部記憶装置205に記憶したアイコン番号を306に記憶させるようにするにしても同様である。

【0030】本実施例では、実行キーが入力されると常にステップ412の処理を行うが、ステップ412の処理を行わせるかどうかをユーザにより指示させる手段を用意し、該指示内容を情報として保持し、ステップ412の直前で該情報を判定することにより、ステップ412の処理を行わせるようにしてもよい。

【0031】

【発明の効果】本発明によれば、前回選択されたアイコンを再び選択する際に、カーソル移動操作が不要であり、アイコンメニュー選択時の使い勝手を向上させることができる。

【図面の簡単な説明】

【図1】アイコンメニュー画面の表示例を示す説明図である。

【図2】本発明にかかる実施例の情報処理装置の構成ブロック図である。

【図3】アイコンやカーソルに関するデータの保持形式を示すための説明図である。

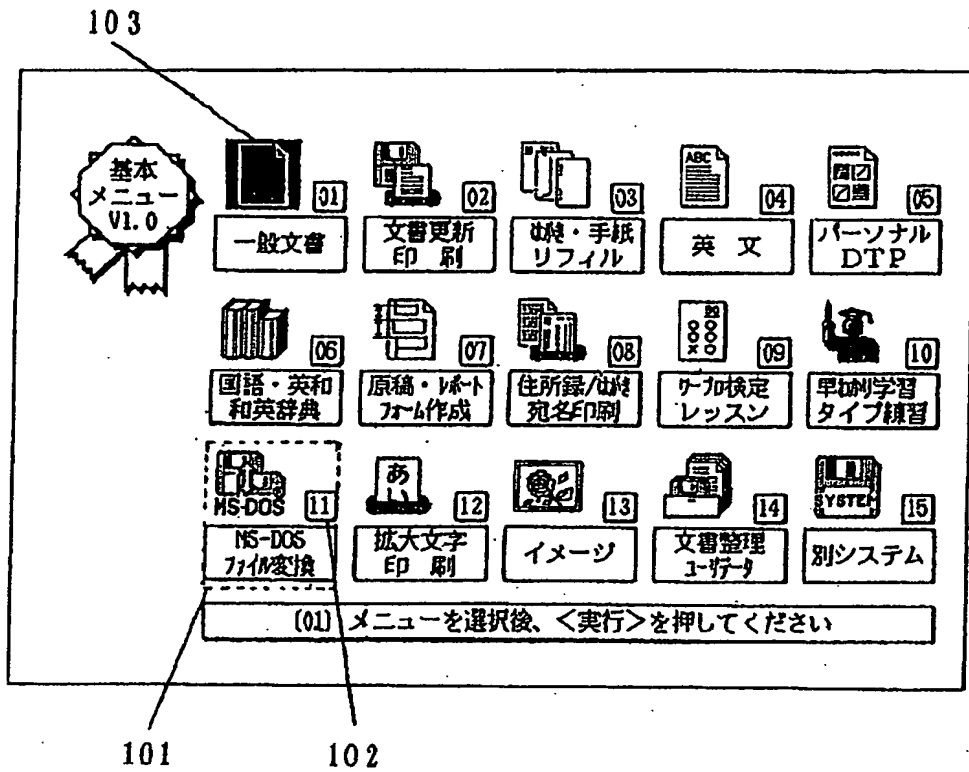
【図4】アイコンやカーソルを表示する手順を示すフローチャートである。

【符号の説明】

201…CPU、  
202…入力装置、  
203…表示装置、  
204…主記憶装置、  
205…外部記憶装置。

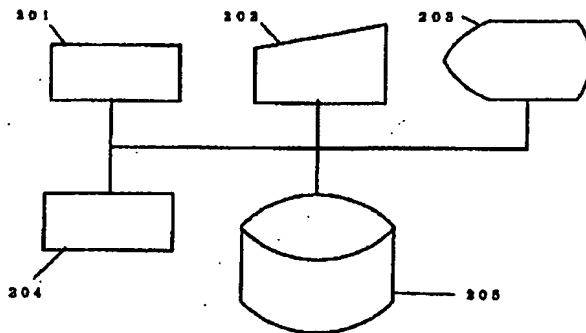
【図1】

図 1



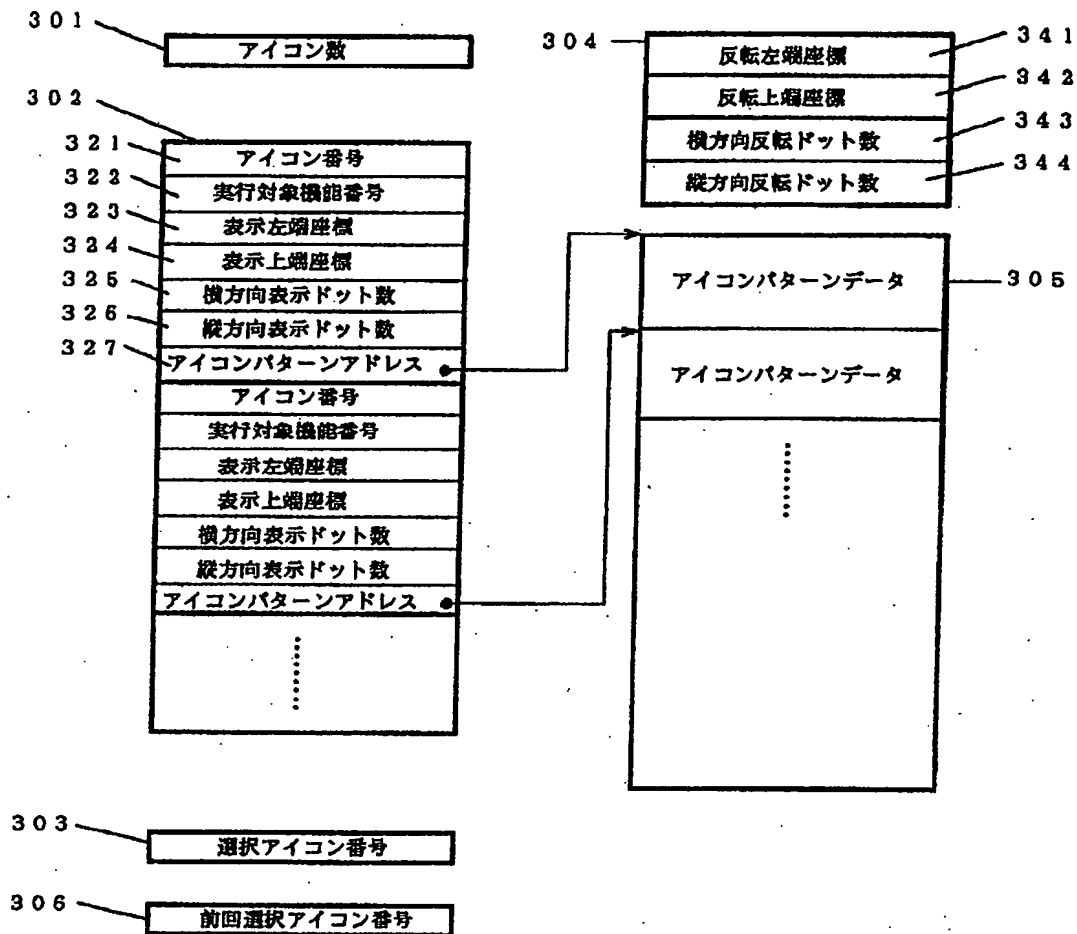
【図2】

図 2



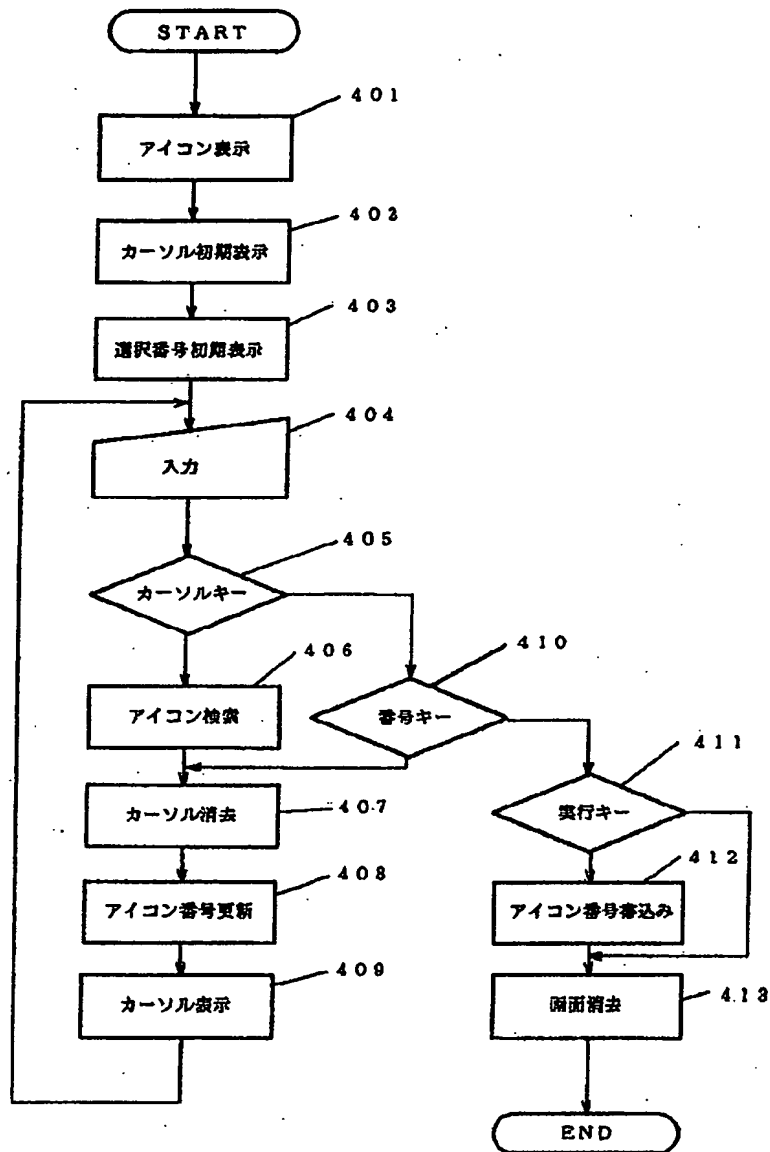
【図3】

図 3



【図4】

図 4



フロントページの続き

(72) 発明者 笠井 康彦  
神奈川県横浜市戸塚区吉田町292番地株式  
会社日立製作所マイクロエレクトロニクス  
機器開発研究所内

(72) 発明者 吉田 伸一  
茨城県日立市東多賀町一丁目1番1号株式  
会社日立製作所情報映像メディア事業部内

(72) 発明者 土屋 知子  
神奈川県横浜市戸塚区吉田町292番地株式  
会社日立製作所マイクロエレクトロニクス  
機器開発研究所内

(72) 発明者 飛鳥馬 肇  
神奈川県横浜市戸塚区吉田町292番地株式  
会社日立製作所マイクロエレクトロニクス  
機器開発研究所内

(72)発明者 松田 泰昌

神奈川県横浜市戸塚区吉田町292番地株式  
会社日立製作所マイクロエレクトロニクス  
機器開発研究所内